

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-003378**Date Inspected:** 26-Jul-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 630**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1530**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China

CWI Name:	Huang Wen Pang and Ye Yong Ju			CWI Present:	Yes	No
Inspected CWI report:	Yes	No	N/A	Rod Oven in Use:	Yes	No N/A
Electrode to specification:	Yes	No	N/A	Weld Procedures Followed:	Yes	No N/A
Qualified Welders:	Yes	No	N/A	Verified Joint Fit-up:	Yes	No N/A
Approved Drawings:	Yes	No	N/A	Approved WPS:	Yes	No N/A
				Delayed / Cancelled:	Yes	No N/A
Bridge No:	34-0006			Component:	OBG and SAS Tower Fabrication	

Summary of Items Observed:

On this date, Caltrans Office of Structural Material (OSM) Quality Assurance (QA) Inspector Joselito Lizardo was present as requested to perform observations on the fabrication of Orthotropic Box Girder (OBG) and SAS Tower at Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China.

The QA Inspector has randomly observed the following activities on sub-assembly Bays mentioned below;

Bay 3: OBG side/bottom/edge panel

This QA was called by ZPMC/CWI Inspector and showed one tack weld that has cracked on 6-open rib stiffener to bottom plate BP032-001-012. This crack was confirmed through MT and after confirming, ZPMC removed the affected tack by grinding. After removal, ZPMC had MT'd the tack removal and found deemed acceptable. See photo below.

Tack/fit-up of 6 and 5 open rib stiffener to bottom/side panels BP309-001, BP311-001, SP653-001, SP642-001 and SP651-001 fillet weld connection using TL-508 this QA observed. Preheating with ceramic thermal blanket 6-open rib stiffener to SP188-001-043~054 prior fillet welding at gantry #1 was also noted.

Bay 4: Tower Diaphragm

This QA Inspector randomly observed two ZPMC welders Liang Yanhai ID #066457 and Liao Yanfei ID #066398 utilizing the SMAW Process in the 3G (Vertical Groove) Position with a 4.8mm diameter electrode, filler metal brand Excalibur E9018M H4R with ZPMC WPS WPS-B-T-3313-Tc-P5, to weld PJP root/fill passes on groove 60mm stiffener to 40mm stiffener tee joint of double diaphragm SSD1-SA335 weld joints 11 and 12. The QA

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Inspector randomly observed ZPMC CWI Yu Dong Ping monitoring preheat and weld parameters.

This QA Inspector randomly observed two ZPMC welders Li Xue Hua ID #058174 and ID #066751 utilizing the FCAW Process in the 3G (Vertical Groove) Position with a 1.4mm diameter electrode, filler metal brand E71T-1, class Supercored 71H, semi automatic with ZPMC WPS WPS-B-T-2233-B-U3-F, to weld fill passes on groove (bent heavy plate) splice butt joint on Tower Diaphragm Flange Sub-Assembly NSD1-SA276 A/B weld joint 12B and SSD1-SA322 A/B weld joint 4A respectively. The QA Inspector randomly observed ZPMC CWI Ye Yong Jun monitoring preheat and weld parameters.

Heat straightening was also observed on 5 & 6 open rib stiffener to side panel SP645-001 weld joints 062~071, SP195(A)-001 weld joints 002~013, 014, 016, 018, 022, 024, 044~055, SP192(A)-001 weld joint 002~013, 014, 016, 018, 022, 024, 038~049, SP649-001 weld joints 062~071 and SP650-001 weld joints 022~031 all due to welding distortion. Oxy-acetylene gas was used with thermal heat input of less than 600 degree C following procedure HSR1(B)- 1642, 1641, 1639, 1671 and 1670 respectively.

Bay 7: OBG - Floor Beam Sub Assembly

QA Inspector J. Lizardo randomly observed ZPMC qualified welder Chen Chuan Zong ID #044824 groove welding fill pass on stiffener end(200mm)to web plate of floor beam FB019-001-111. Mr. Chen was observed welding in the 2G (horizontal) position utilizing a flux corded arc welding (FCAW) process with a 1.4mm diameter electrode, filler metal brand E71T-1, class Supercored 71H, semi automatic. QA inspector Lizardo observed the ZPMC QC CWI Inspector Hu Wei Qing verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification (WPS).

FCAW fillet welding (2F) was observed on stiffener to web plate of floor beam FB019-001-034 and 035. ZPMC welder working on this was identified as Zhang Liang ID# 067036 and Wang Hong Lei ID #066687. Tack welding/fit-up of various stiffeners to web plate of floor beam FB036-001-022/023 using THJ506Fe electrode this QA also observed. ZPMC CWI Hu Wei Qing was noted monitoring the parameters.

This QA observed pre-assembly of CJP skewed connection plate to floor beam bottom flange at SEGSD9-PP041-131/132 and SSD9B-PP041-131/132.

Bay 8: Tower Diaphragm

The QA Inspector randomly observed ZPMC welder ID Number 045247, utilizing the SAW Process in the 1G (Flat Groove) Position with ZPMC WPS WPS-B-T-2221-B-U3c-S-2, to weld the fill pass on plate splice butt joint of 45mm thick plate marked WD1-A3-2B. The QA Inspector randomly observed ZPMC CWI Hu Wei Qing monitoring weld parameters.

This QA Inspector randomly observed two ZPMC welder Li Xing ID number 066675 and Chen Chao Nian ID #048688 utilizing the FCAW Process in the 3G (Vertical Groove) Position with a 1.4mm diameter electrode, filler metal brand E71T-1, class Supercored 71H, semi automatic with ZPMC WPS WPS-B-T-2233-B-U3-F, to weld fill pass on groove (bent heavy plate) splice butt joint on Tower Diaphragm Flange Sub-Assembly ESD1-SA348 A/B-5B and WSD1-SA372 A/B-10B respectively. The QA Inspector randomly observed ZPMC CWI Zhashi monitoring weld parameters.

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This QA observed preheating to >180 degree C on tack welded fillet weld connection between tower diaphragm plate to diaphragm flange SSD1-SA334 A/B-8 prior welding. After attaining required preheat, three ZPMC welder, ID #066164, ID #066675 and ID #066012 observed welding root pass on this connection utilizing the FCAW Process in the 2F (Horizontal) Position with a 1.4mm diameter electrode, filler metal brand K-71TSR, semi automatic with ZPMC WPS WPS-B-T-4132. The QA Inspector randomly observed ZPMC CWI Zhashi monitoring weld parameters.



Summary of Conversations:

No significant conversation occurred today.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Joshua Ishibashi, (858) 232-7081, who represents the Office of Structural Materials for your project.

Inspected By: Lizardo, Joselito

Quality Assurance Inspector

Reviewed By: Cuellar, Robert

QA Reviewer